North Burbank Unit/Kay County Overview of Operations and Previous Surfacings

Plan of Action during Surfacings/Future Prevention Measures

When a surfacing occurs, all injection wells surrounding the subject well are immediately switched to water. This begins putting a more dense fluid into the reservoir and simultaneously creates a "water curtain" which prevents any additional gas from migrating into the subject area. Injection rates are also reduced to begin lowering the bottom hole pressure. In conjunction with reducing the injection rates, all producing wells surrounding the subject well are opened to achieve max production rates. Temporary ESP's are installed in direct offset producing wells to drastically speed up the BHP reduction. Typically 2-4 ESPs are installed depending on the offset producing well's GLR. The bottom hole pressure is consistently measured to determine how quickly the BHP is lowering. After two weeks, a decision is made to drill a relief well if the BHP is not lowering quickly enough or the surfacing rates are not decreasing as quickly as we expect. This relief well will be directionally drilled from a safe loaction to the surfacing where drilling mud can be used to increase hydrostatic pressure in the surfacing wellbore and stop it from purging. After the well stops surfacing, the well is then re-entered with a drilling rig and then re-plugged. All surfacings are created from a pressure increase in the area, which after Chaparral saw a few mud/sand plugged wells or dry holes, we began proactively plugging all of these types of wells before pressure is further increased in the area. We have reviewed all of the existing plugged wellbores in the north half of the unit and have these wells flagged for future plugging before the field is developed in the corresponding areas. In addition to Chaparral performing their own review, the EPA does an "Area of Review" on all new injection permits. All wellbores (producing, injecting, shut-in, plugged, etc) within a quarter mile radius from the subject injector are reviewed to determine the wellbores are in good condition to withstand additional pressure. In conjunction with this, we monitor bottom hole pressure in the north half of the North Burbank Unit daily so we can correlate any pressure changes over time. These help us create a pressure contour map where we can determine if pressure needs to be lowered in any area of concern.

Current Kay County Operations

Currently we have 12 Electric Submersible Pumps (ESPS) running in Kay County, and an additional 3 ESPs in Osage County directly bordering the county line. The ESPs are used to keep the bottom hole pressure lower outside of the active flood area. Seven of the fifteen ESPs have downhole sensors that provide real time pressure data that we are actively monitoring. Using this pressure data, we can create producing bottom hole pressure trends to let us know if we need to speed up the ESPs to produce more fluid and draw the pressure back down if necessary. Chaparral is currently in the process of installing low volume gas meters, so we can monitor for any sizable amount of CO2 venting off the batteries in Kay County. We evaluated the status of all wellbores in the leases directly bordering the active flood area and with that data we began proactively plugging flagged wellbores in late 2016. Additionally, we have selected four wells where we can run ESPs in to draw additional pressure down if we start seeing the pressure trend higher. In conjunction with the three ESPs in Osage County, we have all of the existing flowing producers in the water curtain between Kay County and the CO2 flood open to flow if the pressure ever gets high enough as a precautionary measure. With all of these operating procedures, Chaparral feels confident that we safely control any pressure dissipating from the active CO2 flood and can be proactive in handling any pressure wave we may see.

Migration of Pressure/CO2 into Arbuckle Formation

In Kay County/North Burbank Unit the Arbuckle is approximately 400'-500' below the Burbank formation. We are confident that there is no way that the pressure in the Burbank formation can migrate down to the Arbuckle in "virgin rock". The only possible path is through an existing wellbore drilled through the Burbank and Arbuckle formation. Currently Chaparral has one shut-in Arbuckle disposal well in Kay County that is monitored daily for surface pressure and additionally we have begun running bottom hole pressure readings on the shut-in disposal well. To date, we have never seen any pressure increases or CO2 invasion into this wellbore. The well passed its last MIT on 8/14/17. Additionally just southeast of the active CO2 flood, we are using an old Arbuckle disposal well as a water supply well for the current flood operations. We have an ESP in hole where we are producing daily volumes of ~10,000-20,000 BWPD. This well was just repaired on 8/11/17 due to an ESP issue, but the well's static fluid level was around 350', putting it right in line with our Kay County SWD BHP. Chaparral also operates two Arbuckle SWDs approximately 1 mile south and another 2 miles southeast of the CO2 flood that both have water consistently injected down them. They are currently connected into our water injection pumps, but when not hooked up to the injection pumps the wells will take water on a vacuum. We also monitor surface pressures daily on these wells. We continuously monitor all of our Arbuckle SWDs whether shut-in, producing or injecting for any change that would indicate pressure migration or CO2 encroachment. To date we have not seen any evidence of CO2 or pressure change.

NBU #608 (Osage County- SW/4 of 1-27N-5E)

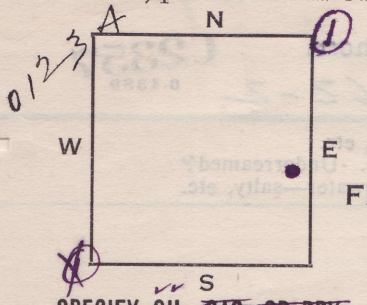
- **Initial Findings:** Old plugged wellbore started surfacing fluid on 8/7/17.

- **Status of P&A:** Well was plugged in 1966 with 60 sacks over the Burbank and 50 sacks of cement at surface.

- **Cause:** It is assumed that the flow is coming directly up the old wellbore from the Burbank. Pressure caused the wellbore to begin surfacing fluid. We are still in the process of determining what the cause of this failure is. It is suspected that the NBU #608 is similar to the NBU #607 where it is assumed that there was insufficient cement bond with formation. We will have more information when we plug this wellbore.

- **Solution:** Two temporary ESP's were installed in offsetting producing wellbores to begin reducing bottom-hole pressure quickly. Additionally all injection in the area was reduced while simultaneously opening all production chokes wide-open to assist in reducing the bottom hole pressure. All active CO2 injection wells were switched to water in the surrounding area to create a "water curtain" to not allow any additional gas to migrate to the area as bottom hole pressure is dropped. A relief well will be drilled over to the surfacing wellbore to stop the well from surfacing. Once the surfacing stops, we will move a drilling rig to location and re-plug the old wellbore.

SW ¼ SEC. 1 T 27 R 5



SPECIFY OIL, ~~GAS, OR DRY~~

5—425a

02356

DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FINAL REPORT OF COMPLETED OR DEEPENED WELLS
FOR LANDS COVERED BY DEPARTMENTAL LEASES

MISCELLANEOUS
RECEIVED
AUG 14 1926
NO. 31510
OSAGE AGENCY

362

This report must be filed within Ten Days after well is shot or producing natural. Use this form for Supplemental Report on Wells plugged back.

COMPANY OPERATING Phillips Petroleum Company ADDRESS Bartlesville, Oklahoma.

LESSEE Phillips Petroleum Company LESSOR Osage Tribe of Indians (W. Hetta)

WELL No. Eight (8) SW ¼ SEC. 1 T. 27 R. 5, OSAGE COUNTY

Well located 982.1 Ft. N.-~~S~~ of So Line and 300 Ft. ~~E~~-W. of East Line Elevation 1111.6 G
(Derrick floor, relative to sea level.)

Well drilled by J. J. Fitzstephens Superintendent C. E. Klein

Date commenced drilling June 14th, , 19 26 Finished August 9th , 19 26

Date commenced deepening , 19 Finished , 19

CASING USED IN DRILLING				CASING LEFT IN HOLE		SHOE		PACKERS		
Length	Size	Wt. per ft.	Thread	Length	Landed at	Length	Make	Kind	Length	Set at
24'2" Ft.	20 Ins.	90 Lbs.	Per in.	24'2" Ft.	Ft.	Ft.		,	Ft.	Ft.
865 Ft.	15½ Ins.	70 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1205 Ft.	12½ Ins.	50 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1440 Ft.	10 Ins.	40 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
2266 Ft.	8¼ Ins.	28 Lbs.	Per in.	2266 Ft.	Ft.	Ft.		,	Ft.	Ft.
2767 Ft.	6 5/8 Ins.	24 Lbs.	Per in.	2767 Ft.	Ft.	Ft.		,	Ft.	Ft.

What was done to protect sands when outside casing was pulled?

Is water completely shut off? Yes Amount water with oil per cent. Is oil cut

Oil Sand 2935-2980

Oil—Initial 24-hr. production 2730 bbls Initial 24-hr. production after shot bbls. Shot from No ~~to~~ Shot size qts.

Tubing

Gas—Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Dry Hole—State what steps have been taken to plug.

Location fee paid [illegible]; Date June 2nd, 1926 Amount, $100.00

PRODUCING SAND RECORD

Top of sand	2930'
Top gas sand	2930'
Top pay sand	2930'
Top first oil	2935'
Bottom oil sand	2991'
Total Depth	2991'

REMARKS:-

Reduced	2916
Sandy shale	2916-2930
3 Mil of gas	2933
First Oil	2935
Sand, soft	2935-2960
Sand, Med. Hard	2960-2975
Sand, hard	2975-2991(C. M.)

Sign here J. S. Dewar

09/17

Your position with lessee Genl. Supt.

Osage Form No. 139
Revised 12-22-48

RECEIVED
MAY 13 1966
OSAGE AGENCY

1 - OIA XXXXXX
1 - File

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSAGE INDIAN AGENCY
PAWHUSKA, OKLAHOMA

Date 5-6-66.

Application For Operation and Report On Wells

North Burbank Unit "6"

(Location fee paid to whom) (Date) (Amount)

Well No. 8 is located 980 ft. from {N/S} line and 300 ft. from {E/W} line.

SW/4, Section 1-27N-5E ____ ____ Osage County, Oklahoma.
(¼ Sec. & Sec. No.) (Twp.) (Range)

The elevation of the {surface / derrick floor} above sea level is ____ ft.

USE THIS SIDE TO REQUEST AUTHORITY FOR WORK (three copies required)

Notice of intention to:

- Drill ☐
- Change plans ☐
- Deepen or plug back ☐
- Convert ☐
- Shoot or acidize ☐
- Pull or alter casing ☐
- Abandon well ☐
- ☐

Details of Work

State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work;

Amount of cement used
Verified by Invoice.
Company. Halliburton & Wise
Inspector. Deibel
Date: 5-20-66

I understand that this plan of work must receive approval in writing of the Osage Indian Agency before operations may be commenced.

Lessee: ____

By: ____

Title: ____

Address: ____

Approved: J. W. Deibel Jr
Osage Agency Inspector
5-20-66

09/17

USE THIS SIDE TO REPORT COMPLETED WORK (one copy required)

Character of well (whether oil, gas or dry) Oil

Subsequent report of:

- Conversion ☐
- Shooting or acidizing ☐
- Altering casing ☐
- Plugging back ☐
- Abandonment ☑

Details of Work

Hallib cmtd form thru 7" pkr set @ 2702' w/ 60 sx cmt & 30% DD. Max pressure 500#. Ripped 7" csg @ 2600' & pld 121 jts. Bridged hole @ 2500' & dmpd 10 sx cmt. Ripped 8-5/8" csg @ 600' & pld 27 jts. Bridged hole @ 45' & dmpd 45 sx cmt. Filled to cellar w/mud & capped w/ 5 sx cmt. FINAL REPORT.

(Continue on reverse side if necessary)

This block for plugging information only

CASING RECORD

Size	In hole when started	Amount recovered	If parted: Depth	If parted: How
8-5/8	2266	586		
7"	2767	2666		
ORIGINAL TOTAL DEPTH				

Plugging commenced 11-25-1965.

Plugging completed 2-23-1966.

Name of the inspector who supervised the plugging of this well ____

Lessee: Phillips Petroleum Company

By: L. O. Knell
District Superintendent.

Subscribed and sworn to before me this 6th day of May 19 66

D. W. Howard.
Notary Public

My commission expires 7/12/66

NBU #1713 (Osage County- SW/4 of 12-27N-5E)

- **Initial Findings:** Old plugged wellbore started surfacing fluid on 6/4/17.

- **Status of P&A:** Well was plugged in 1965 with 50 sacks of cement over the Burbank formation and 70 sacks of cement at surface.

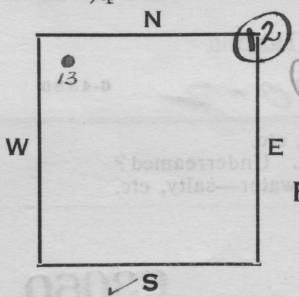
- **Cause:** It was determined that the CO2 from the Burbank was traveling across the Layton formation from 1850'-2315' causing the NBU #1713 to surface fluid. Upon further investigation, an offset wellbore NBU #1726 (INJ) was only plugged with a cement plug above the Layton formation and at surface leaving the Burbank and Layton open to communication. It is assumed that the CO2 traveled up through the NBU #1726 (INJ) into the Layton formation and escaped through the NBU #1713 wellbore after the hydrostatic in the wellbore was decreased due to the CO2.

- **Solution:** To begin trouble shooting the surfacing, noise logs were ran on all surrounding injecting and producing wells around the NBU #1713. It was determined that there was noise in the Layton formation in one offset injector and two producing wells. On these wells that showed noise in the Layton formation, radioactive tracers were injected down the wellbore to check for channeling behind pipe. This allows us to determine if one of these wells are the source of the problem. None of the RA tracers showed any issues with the immediate wellbores, which is why we turned to the NBU #1726 (INJ) since the well did not have a cement plug between the Burbank and Layton formation and is in line with the three wells that showed noise. After determining the cause, a relief well was drilled through the Layton formation where drilling mud was able to stop the well from surfacing fluid on 8/4/17, due to the increased hydrostatic in the wellbore. We are currently in the process of plugging the old wellbore to add additional cement plugs. Additionally, we will be re-entering the NBU #1726 (INJ) P&A, to prevent this from happening again in the area.

- **Looking Forward:** The NBU #1713 was confirmed to be leaking from the Layton formation. After Chaparral re-enters the NBU #1726 (INJ) and puts a cement plug between the Burbank and the Layton formation this will no longer be an area of concern, but will still be closely monitored.

1234D

SW ¼ SEC. 12 T 27 R 5



5—425a

03059

MISCELLANEOUS
RECEIVED
APR 6 1925
NO. 8953
OSAGE AGENCY

DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FINAL REPORT OF COMPLETED OR DEEPENED WELLS
FOR LANDS COVERED BY DEPARTMENTAL LEASES

SPECIFY OIL, ~~GAS, OR DRY~~

470

This report must be filed within Ten Days after well is shot or producing natural. Use this form for Supplemental Report on Wells plugged back.

12

COMPANY OPERATING Phillips Petroleum **ADDRESS** Bartlesville, Oklahoma

LESSEE Phillips Petroleum Company **LESSOR** Osage Tribe of Indians (L.Agnes)

WELL No. 13 SW ¼ SEC. 12 **T.** 27 **R.** 5 , **OSAGE COUNTY**

Well located 300' Ft. N.-S. of North and 300' Ft. E.-W. of West Elevation 1141.8 Gr
(Derrick floor, relative to sea level.)

Well drilled by E. J. Brady Superintendent A. R. Edmondson
Date commenced drilling Feb. 8, 1925 , 19 Finished March 26, 1925 , 19
Date commenced deepening , 19 Finished , 19

CASING USED IN DRILLING Length	Size	Wt. per ft.	Thread	CASING LEFT IN HOLE Length	Landed at	SHOE Length	Make	PACKERS Kind	Length	Set at
11'10" Ft.	20 Ins.	90 Lbs.	Per in.	11'10"	Ft.	Ft.		,	Ft.	Ft.
880' Ft.	15½ Ins.	70 Lbs.	Per in.		Ft.	Ft.		,	Ft.	Ft.
1220 Ft.	12½ Ins.	50 Lbs.	Per in.		Ft.	Ft.		,	Ft.	Ft.
1485 Ft.	10 Ins.	40 Lbs.	Per in.		Ft.	Ft.		,	Ft.	Ft.
2320 Ft.	8¼ Ins.	28 Lbs.	Per in.	2320	Ft.	Ft.		,	Ft.	Ft.
2803 Ft.	6-5/8 Ins.	24 Lbs.	Per in.	2803	Ft.	Ft.		,	Ft.	Ft.

What was done to protect sands when outside casing was pulled?

Is water completely shut off? Yes Amount water with oil per cent. Is oil cut

Oil—Initial 24-hr. production 700 bbls. Initial 24-hr. production after shot bbls. Shot from to , size qts.

Tubing

Gas—Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.
Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Dry Hole—State what steps have been taken to plug.

Location fee paid Date Amount, $

09/17

No location bonus paid. Phillips Petroleum Company owns fee.

1850	2000	170	Hard gray sand
2000	2135	135	Soft gray sandy shale
2135	2155	20	Soft brown shale
2155	2200	45	Hard white sandy lime
2200	2275	75	Soft blue shale
2275	2310	35	Hard gray sandy lime
2310	2320	10	Soft blue slate ($8\frac{1}{4}$" at 2320')
2320	2575	255	Soft dark shale
2575	2610	35	Hard white lime
2610	2665	55	Soft white slate
2665	2675	10	Hard white lime
2675	2715	40	Soft dark shale
2715	2730	15	Hard white lime
2730	2770	40	Soft dark shale
2770	2825	55	Hard white lime (2803' 6-5/8" csg.)
2825	2840	15	Soft dark shale
2840	2850	10	Hard white lime
2850	2955	105	Soft dark shale
2955	2977	22ft	soft gray sandy shale
2977	2982	5	Soft gray sand - gas
2982	3025	43	Oil sand

1 - OIA
1 - File

Osage Form No. 139
Revised 12-22-48

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSAGE INDIAN AGENCY
PAWHUSKA, OKLAHOMA

Date 12-10-65.

Application For Operation and Report On Wells

North Burbank Unit 17

(Location fee paid to whom) (Date) (Amount)

Well No. 13 is located 300 ft. from {N / S} line and 300 ft. from {E / W} line.

SW/4, Section 12-27N-5E Osage County, Oklahoma.
(¼ Sec. & Sec. No.) (Twp.) (Range)

The elevation of the {surface / derrick floor} above sea level is ______ ft.

USE THIS SIDE TO REQUEST AUTHORITY FOR WORK (three copies required)

Notice of intention to:
- Drill ☐
- Change plans ☐
- Deepen or plug back ☐
- Convert ☐
- Shoot or acidize ☐
- Pull or alter casing ☐
- Abandon well ☐
- ☐

Details of Work

State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work;

Amount of cement used.
Verified by Invoice.
Company Halliburton & Misc
Inspector Deibel
Date: 3-17-66

I understand that this plan of work must receive approval in writing of the Osage Indian Agency before operations may be commenced.

Lessee: ______
By: ______
Title: ______
Address: ______
Approved: J. R. Deibel, Jr.
Osage Agency Inspector
3-17-66

USE THIS SIDE TO REPORT COMPLETED WORK (one copy required)

Character of well (whether oil, gas or dry) Oil

Subsequent report of:
- Conversion ☐
- Shooting or acidizing ☐
- Altering casing ☐
- Plugging back ☐
- Abandonment XXXXXXXX ☒

Details of Work

Cmtd form thru 7" SDC pkr set @ 2744' w/50 sx cmt & 30% DD. Max press 650#. Ripped 7" off @ 2570', pld 118 jts, bridged hole @ 2450' and cmtd w/10 sx. Pld 5 jts 8-5/8" csg & bridged hole @ 87' & cmtd w/10 sx. Dmpd 45 sx cmt @ 45'. Dmpd 10 sx cmt which filled to 14'. Capped w/5 sx cmt. FINAL REPORT. P&A.

(Continue on reverse side if necessary)

This block for plugging information only

CASING RECORD

Size	In hole when started	Amount recovered	If parted: Depth	If parted: How
8-5/8"	2320'	105'	105	
7"	2783'	2570'		

ORIGINAL TOTAL DEPTH

Plugging commenced 11-16-65.
Plugging completed 12-6-65.
Name of the inspector who supervised the plugging of this well ______

Lessee: Phillips Petroleum Company
By: M. L. McLee
Assistant District Superintendent.

Subscribed and sworn to before me this 10th day of December 1965

D. E. Howard
Notary Public

My commission expires 7/12/66.

09/17

NBU #607 (Osage County- SW/4 of 1-27N-5E)

- **Initial Findings:** Old plugged wellbore started surfacing fluid on 6/14/16.

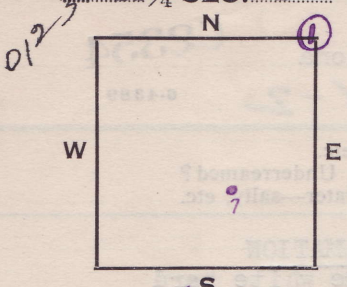
- **Status of P&A:** Well was plugged in 1965 with 40 sacks of cement at 2955' above the Burbank, 10 sacks of cement at 2386' below the Layton, 15 sacks of cement at 150' and capped with 5 sacks of cement.

- **Cause:** Although the NBU #607 was plugged with 40 sacks of cement at the Burbank, it is assumed that the cement did not fully bond with the formation creating a flow path from the Burbank when pressure reached the area.

- **Solution:** Two temporary ESP's were installed in offsetting producing wellbores to begin reducing bottom-hole pressure quickly. Additionally all injection in the area was reduced while simultaneously opening all production chokes wide-open to assist in reducing the bottom hole pressure. All active CO2 injection wells were switched to water in the surrounding area to create a "water curtain" to not allow any additional gas to migrate to the area as bottom hole pressure is dropped. The well was re-entered and surface casing was set at 500' and cemented in place to surface. The well was cleaned out to 756' and attempted to drill further, but unable to drill any deeper. Notified the BIA and it was recommended to plug the wellbore from 756' to surface. The ground was remediated as directed.

- **Looking Forward:** The NBU #607 showed to be plugged similarly to a lot of the wells in the unit, but clearly that was not the case because of the purging event that happened. It is assumed that the cement did not get a good bond with formation. This is very hard to determine from old plugging reports. In these circumstances these wells will leak immediately when pressure reaches the area, which is why our field personnel is closely monitoring all areas with increased pressures daily to catch these events so we can respond immediately and begin making the necessary changes to mitigate the event.

A SW¼ SEC. 1 T 27 R 5



5—425a

02353

MISCELLANEOUS RECEIVED
OCT 20 1926
39865
OSAGE AGENCY

DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FINAL REPORT OF COMPLETED OR DEEPENED WELLS
FOR LANDS COVERED BY DEPARTMENTAL LEASES

SPECIFY OIL, ~~GAS, OR DRY~~

361

This report must be filed within Ten Days after well is shot or producing natural. Use this form for Supplemental Report on Wells plugged back.

11

COMPANY OPERATING PHILLIPS PETROLEUM COMPANY ADDRESS BARTLESVILLE, OKLAHOMA.

LESSEE PHILLIPS PETROLEUM COMPANY LESSOR OSAGE TRIBE OF INDIANS (W. Hetta)

WELL No. Seven (7) SW ¼ SEC. 1 T. 27 R. 5 , OSAGE COUNTY

Well located 982.3 Ft. N.-~~S.~~ of So. Line and 984.6 Ft. ~~E.~~-W. of Est. Line Elevation 1129.3 GR.
(Derrick floor, relative to sea level.)

Well drilled by Leo Johnstone Superintendent C. E. Klein

Date commenced drilling September 2nd, 1926 , 19 Finished October 12th, 1926 , 19

Date commenced deepening , 19 Finished , 19

CASING USED IN DRILLING				CASING LEFT IN HOLE		SHOE		PACKERS		
Length	Size	Wt. per ft.	Thread	Length	Landed at	Length	Make	Kind	Length	Set at
15 Ft.	20 Ins.	90 Lbs.	Per in.	Ft.	15 Ft.	Ft.		,	Ft.	Ft.
885 Ft.	15½ Ins.	70 Lbs.	Per in.	Ft.	358 Ft.	Ft.		,	Ft.	Ft.
1240 Ft.	12½ Ins.	50 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1480 Ft.	10 Ins.	40 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
2309 Ft.	8¼ Ins.	28 Lbs.	Per in.	Ft.	2309 Ft.	Ft.		,	Ft.	Ft.
2790 Ft.	6 5/8 Ins.	24 Lbs.	Per in.	Ft.	2790 Ft.	Ft.		,	Ft.	Ft.

What was done to protect sands when outside casing was pulled?

2989

Is water completely shut off? Yes Amount water with oil per cent. Is oil cut

Oil—Initial 24-hr. production 275 bbls. Initial 24-hr. production after shot 450 bbls. Shot from 2957 to 2989 , size 3½" qts. 60

Tubing

Gas—Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Dry Hole—State what steps have been taken to plug.

LESSEE PHILLIPS PETROLEUM COMPANY LESSOR OSAGE TRIBE OF INDIANS (W. Hetta)

WELL NO. 7 SW¼ SEC. 1 T. 27 R. 5 OSAGE COUNTY, Oklahoma C2354

FORMATION RECORD 361-2

6-4389

Note each change in formation, i. e., sand, lime, shale, sandy shale, etc.
Note character of each formation, i. e., color, hard, soft, caving, etc. Underreamed?
Note contents of each formation, i. e., oil, gas, water, and kind of water—salty, etc.

From	To	Feet	
Surface	5	5	Lime white hard
5	35	30	Shale red soft 20" at 15
35	40	5	Lime white hard
40	50	10	Shale blue soft
50	70	20	Shale red soft
70	125	55	Lime white hard
125	130	5	Shale blue soft
130	195	65	Lime white hard
195	200	5	Shale blue soft
200	255	55	Lime white hard
255	260	5	Shale blue soft
260	270	10	Lime white hard
270	280	10	Shale blue soft
280	320	40	Lime shells white hard
320	365	45	Shale blue soft
365	375	10	Lime white hard
375	460	85	Shale blue soft
460	465	5	Lime white hard
465	490	25	Shale blue soft
490	495	5	Lime whte hard
495	560	65	Shale blue soft
560	590	30	Lime white hard
590	630	40	Shale white soft
630	660	30	Shale blue soft
660	665	5	Shale red soft
665	675	10	Lime red hard
675	685	10	Lime white hard
685	710	25	Shale white soft
710	720	10	Lime white hard
720	730	10	Shale blue soft
730	735	5	Lime white hard
735	750	15	Shale grey soft (3 Blrs water 750 to 760')
750	765	5	Lime whte hard
765	785	20	Lime sandy white hard
785	850	65	Shale blue soft (850 to 880 HFW)
850	880	30	Sand white soft
880	890	10	Shale blue soft (Set 15½" at 885')
890	900	10	Lime white hard
900	905	5	Shale blue soft
905	915	10	Lime white hard
915	930	15	Shale blue soft
930	935	5	Lime white hard
935	970	35	Shale grey soft
970	980	10	Lime white hard
980	985	5	Lime white hard
985	995	10	Shale blue soft
995	1035	40	Lime white hard
1035	1060	25	Shale blue soft
1060	1080	20	Sand white soft

FROM	TO	FEET	FORMATION
2670	2710	40	Lime white hard
2710	2755	45	Shale blue soft
2755	2793	38	Lime white hard (Set 6 5/8
2793	2800	7	Shale blue soft (at 2790')
2800	2810	10	Lime grey hard
2810	2825	15	Shale blue soft
2825	2830	5	Shale black soft
2830	2840	10	Lime white hard
2840	2943	103	Shale blue soft (Reduced
2943	2955	12	Shale sandy Gr.S (Hole at
2955	2989	34	Sand oil' 2943')S.L

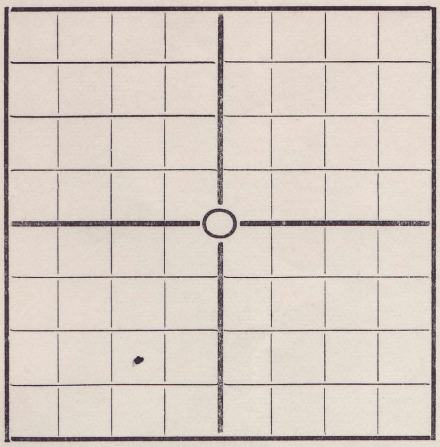
Top of sand 2955
Top of oil 2961'
2989 TOTAL DEPTH

09/17

02380

15

640 Acres
N



Locate well correctly

UNITED STATES
DEPARTMENT OF THE INTERIOR
INDIAN FIELD SERVICE
OSAGE AGENCY

S. Manor "B"

SUPPLEMENTAL WELL RECORD

Note.— This Supplemental well record of the deepening, plugging back, altering of casing, etc., done on the well since the previous record was filed must be submitted to the Superintendent or his agent not later than 15 days after work is completed.

Company operating Phillips Petroleum Company

Office address Bartlesville, Oklahoma

Lessor Osage Indian Agency

Well No. 7 Sec. 1 Twp. 27N Rge. 5E County Osage

Located in SE ¼ SW ¼, 982.3 Ft. N of South line and 984.6 Ft. W of East line.

Date previous record filed 6-11, 1945 Orginal depth last reported _____, 194_

Reason for doing work _____ Present total depth 2987

Commenced work 7-23, 1945 Completed work 7-23, 1945

List below all work done on well, such as redrilling, deepening record, alteration of casing in well, type of plugs used in plugging back, shooting record, and preparation of well for repressuring an area, etc. Give results of operation.

7-23-45 Laid 2" gas line and connected well gas for input duty.

Amounts of gas injected immediately following conversion:

56	MCF @	38#	7-23-45	16Hrs (First 16Hours)
76		36	24	24
69		34	25	24
57		28	26	24
70		33	27	24
70		34	28	24

Oil To Gas Input

E

Date 9-7, 1945 Signed: F.L. Jones

Address of agent Route 1, Box 1-A, Kaw, Oklahoma Agent's title District Superintendent

This page is for the condition of the well at above date and constitutes a complete and correct record of all work done thereon. Additional information may be placed on reverse side.

09/17

OSAGE PRINTERY, PAWHUSKA, OKLA 5M-2-41

1 - OIA
1 - File

Osage Form No. 139
Revised 12-22-48

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSAGE INDIAN AGENCY
PAWHUSKA, OKLAHOMA

Date 4-14-65

Application For Operation and Report On Wells

North Burbank Unit 6
(Location fee paid to whom) (Date) (Amount)

Well No. 7 is located 980 ft. from {N/S} line and 980 ft. from {E/W} line.

SW/4 Sec. 1-27N-5E
(¼ Sec. & Sec. No.) (Twp.) (Range) Osage County, Oklahoma.

The elevation of the {surface / derrick floor} above sea level is _____ ft.

USE THIS SIDE TO REQUEST AUTHORITY FOR WORK
(three copies required)

Notice of intention to:
- Drill ☐
- Change plans ☐
- Deepen or plug back ☐
- Convert ☐
- Shoot or acidize ☐
- Pull or alter casing ☐
- Abandon well ☐
- _____ ☐

Details of Work

State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work;

Amount of cement used.
Verified by Invoice.
Company Halliburton
Inspector
Date: 4-21-65

I understand that this plan of work must receive approval in writing of the Osage Indian Agency before operations may be commenced.

Lessee: _____

By: _____

Title: _____

Address: _____

Approved: _____
Osage Agency Inspector
4-20-65

09/17

USE THIS SIDE TO REPORT COMPLETED WORK
(one copy required)

Character of well (whether oil, gas or dry) Repressure

Subsequent report of:
- Conversion ☐
- Shooting or acidizing ☐
- Altering casing ☐
- Plugging back ☐
- Abandonment ☒

Details of Work

Cmtd form thru 2-3/8" tbg set @ 2955' w/40 sx reg cmt w/30% Diacel D & 20# Jelflake. Ripped of 7" csg @ 280' & pld 109 jts. Dumped 10 sx cmt @ 2360'. Ripped 8-5/8" csg 2060-1410' & pld 68 jts. Dumped 15 sx cmt w/30% Diacel D @ 150'. Capped w/5 sx cmt.

(Continue on reverse side if necessary)

This block for plugging information only

CASING RECORD

Size	In hole when started	Amount recovered	If parted: Depth	If parted: How
8-5/8"	2309'	1419'	1410'	
7"	2790'	2386'	1380'	
ORIGINAL TOTAL DEPTH				

Plugging commenced 8-19-64

Plugging completed 1-13-65

Name of the inspector who supervised the plugging of this well _____

Lessee: Phillips Petroleum Company

By: M. L. McLee Asst. Dist. Supt.

Subscribed and sworn to before me this 14th day of April 1965

_____
Notary Public

My commission expires 7-12-66

McCassey #11 (Kay County- NW/4 of 15-27N-5E)

- **Initial Findings:** Old plugged wellbore started surfacing fluid on 5/6/2015.
- **Status of P&A:** The well was mud plugged in 1957 with only a 5 sacks cement plug at surface.
- **Cause:** Inadequate plugging of old well bore failed as reservoir pressure increased.
- **Solution:** The well was re-entered and cleaned out to 1495' and tagged up on junk. Cement was pumped from 1495' to surface. The ground was remediated as directed.
- **Looking Forward:** Prior to expansion of the active CO2 flood, Chaparral is proactively plugging any sand or mud plugged wells before any additional pressure reaches these wellbores.

Form 1002—50M-2-21

WELL RECORD

23046

Mail to Corporation Commission, Oklahoma City, Okla.

Company Twin State Oil Company Address Tulsa, Oklahoma

County Kay Farm McCassey Section 15 Township 27N Range 5E Well No. 11

Drilling Commenced January 30 19 24 Drilling Completed April 8 19 24

Correspondence regarding this well should be sent to Name E. J. Gorman Address Box 1501, Tulsa

CASING RECORD

SIZE	PUT IN WELL FT.	PUT IN WELL IN.	PULLED OUT FT.	PULLED OUT IN.	LEFT IN WELL FT.	LEFT IN WELL IN.	PACKERS AND SHOES
15½"	991		776	6	214	6	
12½"	1283		1283				
10	1517		932		585		
8	2609 2609				2619 2609		
6 5/8	2829 2864				2829 2864		

Character of well Oil

Oil well, initial production Estimated 300 bbls.

Gas well, rock pressure Volume Wet or Dry

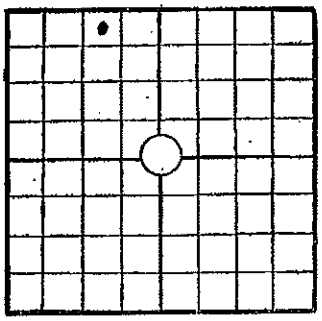
Elevation above sea level at top of casing

Location of well in Section: 980' from East, 330' from North lines, NW¼

General Remarks:

Spot Well Correctly ✓

640 Acres



[illegible]AL REPORT INDIVIDUAL WELL STAT[illegible]

[illegible]/4 Sec. 15-[illegible], Kay County, Oklahoma

LEASE G. McCassey WELL NO. 12 DATE 11-6-57

The approved recommendations as authorized under authorization No. Expense have been carried out, and the following detailed report is made.

GENERAL DESCRIPTION OF WORK:

Moved in casing pulling machine, pulled 6-5/8" and 8-5/8" casing, mudded hole, well plugged and abandoned 11-5-57.

NORMAL PRODUCTION PRIOR TO THIS WORK Shut down 8-12-57 as unprofitable to operate.

DAILY REPORT DETAILED

DATE	TOTAL DEPTH	NATURE OF WORK PERFORMED
10- 9-57	3037	This is a shut down oil well which was shut down as unprofitable to operate on August 12, 1957. On 10-9-57 moved in Smith & Smith Casing Pulling Company's pipe pulling machine and rigged up to pull pipe and plug and abandon well.
10-10-57	0	Completed rigging up pipe pulling machine and filled hole to surface with heavy mud.
10-11-57	0	Took hold of 6-5/8" casing and pulled tension. Shot pipe at 2600 ft. and would not come loose. Shot pipe at 2559 and came loose.
10-12-57	0	Pulled 116 jts. of 6-5/8" casing. No tally.
10-13-57	0	Shut down over Sunday.
10-14-57	0	Refilled hole to surface with heavy mud. Took hold of 8-1/4" casing. Working pipe.
10-15-57	0	Pulled tension on 8-5/8" OD casing and shot at 1100 ft. and would not come loose. Shot at 1000 ft. and would not come loose. Shot at 925 ft. and came loose. Pulled pipe for total recovery of 916 ft., 44 jts. and 1 nipple, of 8-5/8" OD 32# and 24#, 8V thd. rge 1, LW casing, fair condition. Recovered 2553 ft., 116 jts. and 1 nipple of 7" OD, 24#, 10V thd., rge 2 LW casing, good condition.
10-16-57	0	Refilled hole to surface with heavy mud. WOCTS.
10-17-57 thru 11- 4-57	0	Waiting on mud to settle.
11- 5-57	0	Mud did not settle any. Cleaned mud out of 15-1/2" casing to 15 ft. Dumped 5 sacks of cement into 15-1/2" casing which filled to bottom of cellar. Well plugged and abandoned 11-5-57.
		FINAL REPORT.

DISTRICT APPROVAL

Form 903 5-54

NBU #706 (Osage County- SE/4 of 1-27N-5E)

- **Initial Findings:** "Dry hole" wellbore started surfacing fluid on 4/16/15.

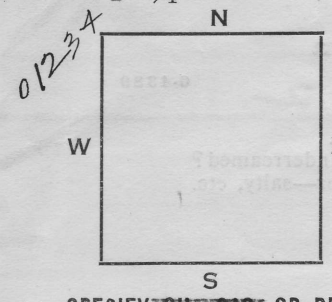
- **Status of P&A:** The well was plugged in 1928 after it was determined as a "dry hole" upon initial completion where all casing was pulled out and the well was mudded to surface with a cement cap.

- **Cause:** After seeing the NBU #706 surface, it was determined that a dry hole back in the 1920's was not actually a dry hole. The well still had Burbank open in it where pressure/fluids could migrate through formation, but the well was just not producing in the volumes that other wells in the unit were at the time. The well only had a cement cap at surface which began to leak when enough pressure came into the area.

- **Solution:** A containment pit/berm was constructed to catch fluid. Three temporary ESP's were installed in offsetting producing wellbores to begin reducing bottom-hole pressure quickly. Additionally all injection in the area was reduced while simultaneously opening all production chokes wide-open to assist in reducing the bottom hole pressure. All active CO2 injection wells were switched to water in the surrounding area to create a "water curtain" to not allow any additional gas to migrate to the area as bottom hole pressure is dropped. The NBU #706 was re-entered and surface casing was set to 640' and cemented to surface. The well was then cleaned out to TD and cement plug was pumped over the Burbank. An additional cement plug was pumped above the Layton formation and a surface plug from 700' to surface.

- **Looking Forward:** After determining that "dry holes" back in the 1920's were not actually dry holes where no sand is present, Chaparral re-plugged an additional well in the area. We will treat dry holes as a sand/mud plugged wellbore where we are proactively plugging these wells before the pressure reaches the area.

SW¼ SE¼ SEC. 1 T 27 R 5



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02334

MISCELLANEOUS
RECEIVED
JUL 14 1928
No. 27881
OSAGE AGENCY

DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FINAL REPORT OF COMPLETED OR DEEPENED WELLS
FOR LANDS COVERED BY DEPARTMENTAL LEASES

SPECIFY OIL, GAS, OR DRY 354

This report must be filed within Ten Days after well is shot or producing natural. Use this form for Supplemental Report on Wells plugged back.

COMPANY OPERATING Phillips Petroleum Co. ADDRESS Bartlesville, Oklahoma

LESSEE Phillips Petroleum Company LESSOR Osage Indian Tribe (W. Brown)

WELL No. 6 SW¼ SE ¼ SEC. 1 T. 27 R. 5, OSAGE COUNTY

Well located 862 Ft. N. of S. Line and 980 Ft. E. of W. Line Elevation 1110± old topo
(Derrick floor, relative to sea level.)

Well drilled by Lee Drlg. Co. Superintendent C. E. Klein

Date commenced drilling 5-26-28, 19 Finished 7-9-28, 19

Date commenced deepening , 19 Finished , 19

CASING USED IN DRILLING				CASING LEFT IN HOLE		SHOE		PACKERS		
Length	Size	Wt. per ft.	Thread	Length	Landed at	Length	Make	Kind	Length	Set at
40 Ft.	20 Ins.	90 Lbs.	Per in.	40 Ft.	Ft.	Ft.		,	Ft.	Ft.
870 Ft.	15½ Ins.	70 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1220 Ft.	12½ Ins.	60 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1440 Ft.	10 Ins.	40 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
2260 Ft.	8 Ins.	28 Lbs.	Per in.	2260 Ft.	Ft.	Ft.		,	Ft.	Ft.
2758 Ft.	6 5/8 Ins.	26 Lbs.	Per in.	2758 Ft.	Ft.	Ft.		,	Ft.	Ft.

What was done to protect sands when outside casing was pulled?

3025

Is water completely shut off? Yes Amount water with oil – per cent. Is oil cut –

Oil—Initial 24-hr. production Dry bbls. Initial 24-hr. production after shot bbls. Shot from to , size qts.

Tubing

Gas—Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.
Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Dry Hole—State what steps have been taken to plug.

Location fee paid Phillips Owned Date Amount, $

Sand Record

Light shale	2870	2955	There was no true sand encountered in this hole
Light Sandy shale	2955	2965	
Light shale	2965	2990	
Light shale	2990	3014	
Mississippi Lime, grey hard	3014	3025	
T. D. S. L.	3025		

FORMATION CONTINUED

2775	2780	5	Shale dark soft
2780	2800	20	Lime grey hard
2800	2815	15	Shale blue soft
2815	2818	3	Lime grey hard
2818	2870	52	Slate dark med.
2870	2955	85	Shale light soft
2955	2965	10	Shale light medium (Sandy)
2965	3014	49	Shale light soft
3014	3025	11	Lime
3025			Total Depth. (Dry)

Sign here J. L. Dewar

Your position with lessee Gen'l Supt of Prod'n

02335

01234 980N 980E 7/20/28

5-425b

02336

23

MISCELLANEOUS
RECEIVED
JUL 19 1928
No. 28628
OSAGE AGENCY

DEPARTMENT OF THE INTERIOR

UNITED STATES INDIAN SERVICE

Osage Indian Agency, Pawhuska, Okla.

PLUGGING RECORD

NOTICE—Permission must be obtained before any well is plugged.

Date of letter granting permission to plug: .....

LESSEE Phillips Petroleum Co., OSAGE NATION, LESSOR

Address Bartlesville, Okla.

Well No. 6 ¼ S.E. Sec. 1 T. 27 R. 5 Osage County

Commenced Plugging Work July 12, 1928. Finished Work July 14, 1928.

Character of Well (Whether Oil, Gas or Dry) Dry Total Depth 3025

Name of producing sand ..... Depth top ..... Bottom .....

Show depth and thickness of all fresh water, oil and gas formations (as Big Lime, Oswego, Bartlesville, etc.)

RECORD SANDS **CASING RECORDS**

Formation	From	To	Size	Put In	Pulled Out
Sand	720	730	20"	40'	40'
"	1010	1035	15½"	870'	870'
"	1075	1090	12½"	1220'	1220'
"	1385	1410	10"	1440'	1440'
"	1550	1580	8½"	2260'	2260'
"	1815	1935	6 5/8"	2758'	2758'

Was well filled with mud fluid according to Regulations, approved March 7, 1923, governing operations of Osage leases in Oklahoma? Yes. Describe the manner in which the well was plugged.

Well was filled with mud laden fluid as each successive string of casing was pulled. Filled to top with mud laden fluid, plugged and capped with cement.

Name of Inspector who supervised the plugging of this well: R. C. Baer

Signed: O. K. Kline
Representative of Company.

REMARKS: Why plugged? Dry Hole. If abandoned oil or gas well, state amount of last production .....

Subscribed and sworn to before me this 16 day of July, 1928

My commission expires May 16, 1929

Ray Hardway
Notary Public.

My Commission expires .....

O. K. By R. C. Baer Department Inspector.

McCassey #2 (Kay County- NW/4 of 15-27N-5E)

- **Initial Findings:** (Limited information) Chaparral believes there was gas to surface beginning in December of 2014.

- **Status of P&A:** This well was sand plugged in 1937- "Hole filled with sand pumping to bottom of 6" casing…".

- **Cause:** The wellbore was only sand plugged (no cement) and the gas in the reservoir was able to migrate up through the sand to surface.

- **Solution:** The well was re-entered cleaned out to TD (3028'). Surface casing was set at 620' and cemented in place. Three cement plugs were set to properly plug the wellbore with one plug over the Burbank formation, one plug over the Layton formation and one from 700' to surface. The ground was remediated as directed.

- **Looking Forward:** Prior to expansion of the CO2 flood, Chaparral is proactively plugging any sand or mud plugged wells before any additional pressure reaches these wellbores.

Form 1002-50M-4-22

25

0 0 5 6 0 0 2 0 0 1 4

WELL RECORD

Mail to Corporation Commission, Oklahoma City, Okla.

Company Twin State Oil Company Address Box 1501, Tulsa, Oklahoma

County KAY Farm McCassey Section 15 Township 27N Range 5E Well No. Two

Drilling Commenced March 23d 19 23 Drilling Completed June 4th, 19 23

Correspondence regarding this well should be sent to Name Mr. E.J.Corman Address Box 1501, Tulsa, Oklahoma.

CASING RECORD

SIZE	PUT IN WELL		PULLED OUT		LEFT IN WELL		PACKERS AND SHOES
	FT.	IN.	FT.	IN.	FT.	IN.	
12½"	1235 '	5"					
10"	1375'						
6¼"	2495'						
8¼"	2295'						
15½"	817'		817'				

Character of well Oil well

Oil well, initial production 100 barrels an hour

Gas well, rock pressure ..... Volume ..... Wet or Dry .....

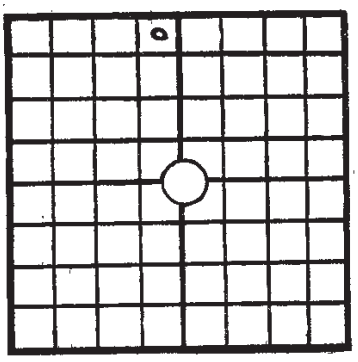
Elevation above sea level at top of casing .....

Location of well in Section:

300' Loc'n NE corner NW¼ -of Sec.15-27N-5E

Spot Well Correctly

640 Acres



General Remarks: .....

09/17

FORMATION RECORD

Show all formations, especially all sands and character and contents thereof.

FORMATIONS	TOP	BOTTOM
Red rock	0	5
Red rock	5	30
Lime	30	35
Red rock	35	50
Red rock	50	70
red rock	70	120
Lime	120	220
Red rock	220	230
Lime	230	275
Blue slate	275	280
Lime	280	300
Slate gray	300	310
Red rock	310	320
Blue mud	320	385
Lime	385	395
Blue mud	395	495
Lime	495	500
Not given	500	540
Shale blue	540	600
Lime gray	600	605
Mud	605	610
Lime	610	620
Blue shale	620	660
Lime	660	670
Blue shale	670	680
Lime	680	685
Sand	685	695
Shale gray	695	750
Shale brown	750	780
Lime	780	817
Shale gray	827	875
Shale gray	875	885
Lime	885	895
Shale blue	895	945
Lime	945	950
Lime	950	980
Shale blue	980	1000
Lime gray	1000	1020
Red rock	1020	1025
Lime	1025	1040
Slate blue	1040	1050
Lime	1050	1060
Sand Water	1060	1075
Sand H.F.W.	1075	1100
Shale blue	1100	1110
Slate blue	1110	1115
Sand	1115	1130
Slate blue	1130	1140
Sand	1140	1155
Sand	1155	1165
Slate	1165	1185
Sand	1185	1200
Lime	1200	1210
Slate blue	1210	1220
Sand	1220	1240
Not given	1240	1245
Shale	1245	1250

REMARKS		
Slate blue	1250	1255
Shale blue	1275	1295
Slate blue	1295	1315
Slate	1315	1330
Slate blue	1330	1340
Brown shale	1340	1350
Pink	1350	Cave
Blue shale	1350	1360
Sand	1360	1375
Shale blue	1375	1400
Shale blue	1400	1430
Lime	1430	1440
Shale brown	1440	1450
Lime	1450	1470
Shale blue	1470	1495
Lime	1495	1540
Slate & Shale	1540	1580
Lime	1580	1585
Sand -water	1585	1620
Slate blue	1620	1625
Lime	1625	1640
Sand	1640	1645
Shale blue	1645	1650
Shale blue	1650	1675
Sand water	1675	1685
Shale sandy	1685	1710
5 bailers water		
Sandy lime	1719	1720
Shale blue	1720	1725
Lime sandy	1725	1735
Running 15½" Casing		
Lime	1735	1760
Slate blue	1760	1830
Shale blue	1830	1840
Sand -little gas	1840	1850
Sand-water	1850	1870 HFW
Sand	1870	1880
Sand & lime	1880	2010
Lime	2010	2030
Lime sandy	2030	2065
Lime	2065	2090
Sand	2090	2130
Sand	2130	2160
Slate blue	2160	2165
Shale brown	2165	2175
Shale brown	2175	2175
Lime black	2175	2185
Shale gray	2185	2210
Shale gray	2210	2235
Sandy lime	2235	2265
Slate blue	2265	2270
Lime	2270	2280
Sand	2280	2290
Lime	2290	2295
Sand	2295	2325
Slate blue	2325	2490
Lime	2490	2500
Slate blue	2500	2565

Continued

Method of shutting off water..... Is water completely shut off?.....

Amount of water with oil.....per cent. Is oil cut?.....

I,.....being first duly sworn on oath, state that I have knowledge of the facts and matter herein set forth and that the same are true and correct.

09/17

.....
Representative of Company

Subscribed and sworn to before me this the.....day of.....192.....

Show all formations, especially all sands and character and contents thereof.

0056020204

FORMATIONS	TOP	BOTTOM	REMARKS
Lime gray	2565	2575	
Slate black	2575	2580	
Lime black	2580	2595	
Lime	2595	2605	
Shale brown	2605	2610	
Lime	2610	2620	
Shale gray	2620	2625	
Lime	2625	2630	
Lime gray	2630	2635	
Break 5 bailers water	2635	2640	
Lime gray	2640	2660	
Shale gray	2660	2665	
Shale brown	2665	2680	
Lime	2680	2685	
Shale brown	2685	2695	
Lime black	2695	2705	
Shale	2705	2710	
Shale gray	2710	2715	
Slate black	2715	2720	
Lime black	2720	2735	
Shale blue	2735	2740	
Lime	2740	2765	Water and gas at 2745
Lime gray	2765	2775	
Slate black	2775	2780	
Lime	2780	2785	
Shale blue	2785	2800	
Shale brown	2800	2805	
Lime blue	2805	2815	
Lime	2815	2835	
Shale	2835	2855	
Lime	2855	2870	
Shale blue	2870	2885	
Lime gray	2885	2890	
Slate black	2890	2915	
Shale blue	2915	2920	
Shale and lime	2920	2950	
Shale	2950	2982	
Sandy LS	2982	2190	
Top of sand	2990		
1st show of oil	2997		
Total depth	3015		

Method of shutting off water..... Is water completely shut off? YES

Amount of water with oil..... per cent. Is oil cut?.....

I, E. J. Gorman being first duly sworn on oath, state that I have knowledge of the facts and matter herein set forth and that the same are true and correct.

E J Gorman
Representative of Company

Subscribed and sworn to before me this the 7 day of June 1923

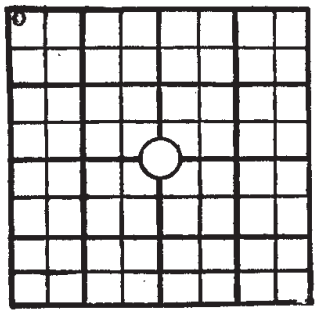
09/17

J. J. Stephens
Notary Public

My commission expires Nov 8 1927

Form 1005 0 0 5 6 0 0 2 0 0 1 4 153725

640 Acres
N



LOCATE WELL CORRECTLY

PLUGGING RECORD

MAIL TO CORPORATION COMMISSION
Oil & Gas Conservation Department
Oklahoma City, Oklahoma

NOTICE: All questions on this form must be satisfactorily answered.

Company Operating Twin State Oil Co.

Office Address Tulsa, Oklahoma

County Kay Sec. 15 Twp. 27N Range 5E

Farm Name McCassey Well No. 2 Field Cooper

Character of Well (whether oil, gas or dry) Oil

Commenced Plugging Jan 22 1936 Finished March 16, 1936 Total Depth 3028'

Was permission obtained from the Corporation Commission or its agents before plugging was commenced? Yes

Name of Conservation Officer who supervised plugging of this well S. L. Shores

Name of producing sand Burbank Depth top ..... Botton 3028'

Show depth and thickness of all fresh water, oil and gas formations.

SAND OR ZONE RECORDS				CASING RECORDS		
Formation	Content	From	To	Size	Put In	Pulled Out
				20"	19'-3"	19'-3"
				12½	1220'	757'-11"
				8¼"	2295'	2141'-11"
				6 5/8	2825'	2825'
				5 3/16	2787'	2787'

Describe in detail the manner in which the well was plugged, indicating where the mud fluid was placed and the methods used in introducing it into the hole. If cement or other plugs were used, state the character of same and depth placed:

Hole filled with sand pumpings to botton of 3" casing, started 3", pulled 5 joints and refilled hole. Pulled 15 joints and refilled hole. Pulled balance of 6" and filled hole to bottom of 8". Pipped 8" 2141'. Pulled 20 joints and refilled hole. Pulled 80 joints and refilled hole to bottom of 12½. Pipped 12" pulled 5 joints, refilled hole. Pulled balance 12½ filled hole to surface.

Does the above conform strictly to the oil and gas regulations? Yes

The Law requires that adjacent lease, royalty and land-owners be notified; give their names with their address below:

Mr. George S. Bole, 604 Exchange Bldg.,
Skelly Oil Company, Box 1650
Carter Oil Company,
R.C. Sharp, 825 Kennedy Bldg.
Tulsa, Oklahoma.

Adams Royalty Company, Chicago, Ill.
Superintendent Osage Indian Agency
Pawhuska, Oklahoma
Phillips Petroleum Company
Bartlesville, Oklahoma

REMARKS: Why plugged? No good If abandoned oil or gas well, state amount and date of last production

Correspondence regarding this well should be addressed to Twin State Oil Co.

Address Tulsa, Okla.

I, the undersigned, being first duly sworn upon oath, state that this well record is true, correct and complete according to the records of this office and to best of my knowledge and belief.

O. H. Thomas
Name and title of representative of company.

Subscribed and sworn to before me this the 18 day of March 1936

My Commission expires Nov. 24, 1937

09/17

Thelma Whaley
Notary Public.

NBU #2323 (INJ) - Source Well: (Osage County NW/4 of 14-27N-5E)

- **Initial Findings:** On 8/8/14 the NBU #2405 (old P&A'd wellbore) was found surfacing fluid. Additionally on 9/10/14, the NBU #2308 began to surface fluid.

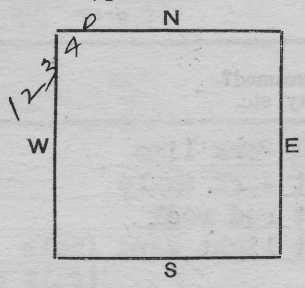
- **Status of P&A before Surfacing:**
  - NBU #2405: The well was plugged in 1963 with 105 sacks from 2588'-2988', 10 sacks at 2490', then mudded to surface.
  - NBU #2308: The well was plugged in 1963 with 55 sacks from 2690'-3025', 10 sacks at 2380', then mudded to surface.

- **Cause:**
  - NBU #2323 (INJ) was an active injection well found channeling behind pipe. The channel provided an avenue for fluids & gas to migrate up-hole near ground level and surface fluids in offset wellbores.
  - NBU #2405 and NBU #2308: It was determined that the fluid was coming through the Layton (via the channel on NBU 2323 (INJ)) and up through the wellbore. These wells were re-entered and P&A'd while an active investigation was going on in search for the problem well. The wells began to surface because there was no cement above the Layton formation. This only became a problem because of the channel on the NBU #2323 (INJ) which allowed fluid to migrate from the Layton to the Burbank.

- **Solution:**
  - The NBU #2323 (INJ) active injector was plugged. Four cement plugs were set to properly plug the wellbore with one plug over the Burbank formation, one plug directly below the Layton formation, one plug above the Layton formation and one from 625' to surface. The ground was remediated as directed.
  - The NBU #2405 was re-entered and surface casing was set and cemented at 363'. The well was cleaned out to 2475' and a cement plug was added at 2460' (in addition to the two current cement plugs already in place). An additional plug was pumped at the Layton formation where a cement plug was left in casing at 1390'. Finally cement was pumped from 550' to surface. The ground was remediated as directed.
  - The NBU #2308 was re-entered and surface casing was set and cemented at 628'. The well was cleaned out to 2946' where a cement plug was pumped over the Burbank. An additional plug was pumped above Layton formation. Finally cement was pumped from 890' to surface. The ground was remediated as directed.

- **Looking Forward:** Chaparral has run injection profiles and temperature logs on all active injection wells to determine if a well is channeling behind pipe. We will continue to proactively log each new injector as they are put online.

NW ¼ SEC. 14 T 27 R 5



5—425a

03392

MISCELLANEOUS
RECEIVED
JUN 7 1924
NO. 14043
OSAGE AGENCY

DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FINAL REPORT OF COMPLETED OR DEEPENED WELLS
FOR LANDS COVERED BY DEPARTMENTAL LEASES

SPECIFY OIL, GAS, OR DRY: Oil

This report must be filed within Ten Days after well is shot or producing natural. Use this form for Supplemental Report on Wells plugged back.

COMPANY OPERATING: Midland Oil Co. ADDRESS: Bartlesville, Oklahoma.

LESSEE: Midland Oil Co. Dolmar Oil Co. LESSOR: Osage Nation

WELL No. 8 NW ¼ SEC. 14 T. 27 R. 5, Osage COUNTY

Well located 980' Ft. N.–S. of and 300 Ft. E.–W. of Center of Sec. Elevation 1141
(Derrick floor, relative to sea level.)

Well drilled by Dodd and Byrnes Superintendent

Date commenced drilling April 4, 1924 Finished May 27, 1924

Date commenced deepening , 19 Finished , 19

CASING USED IN DRILLING				CASING LEFT IN HOLE		SHOE		PACKERS		
Length	Size	Wt. per ft.	Thread	Length	Landed at	Length	Make	Kind	Length	Set at
35 Ft.	20 Ins.	90 Lbs.	Per in.	35 Ft.	35 Ft.	Ft.		,	Ft.	Ft.
905 Ft.	15⅜ Ins.	70 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1217 Ft.	12½ Ins.	50 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1475 Ft.	10 Ins.	40 Lbs.	Per in.	690 Ft.	1475 Ft.	Ft.		,	Ft.	Ft.
2346 Ft.	8¼ Ins.	32 Lbs.	Per in.	2346 Ft.	2346 Ft.	Ft.		,	Ft.	Ft.
2806 Ft.	6 5/8 Ins.	24 Lbs.	Per in.	2806 Ft.	2806 Ft.	Ft.		,	Ft.	Ft.

What was done to protect sands when outside casing was pulled?

Is water completely shut off? Yes Amount water with oil None per cent. Is oil cut No

Oil—Initial 24-hr. production 200 bbls. Initial 24-hr. production after shot 525 bbls. Shot from 3001 to 3031, size 2½" qts. 50

Tubing

Gas—Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Dry Hole—State what steps have been taken to plug.

Location fee paid Geo. N. Wise Date March 21, 1924 Amount, $ 100.00

(Sign here) D. A. Howard

Your position with the lessee Superintendent Oklahoma Dist.

6—4339

09/17

03393

FORMATION RECORD

6—4339

From	To	Feet	Note each change in formation, i. e., sand, lime, shale, sandy shale, etc. Note character of each formation, i. e., color, hard, soft, caving, etc. Underreamed? Note contents of each formation, i. e., oil, gas, water, and kind of water—salty, etc.
Surface	30	30	Soft Red Rock
30	40	10	Hard white lime
40	110	70	Soft Red Rock
110	185	75	Hard white lime
185	190	5	Soft Red Rock
190	250	60	Hard light lime
250	260	10	Soft light shale
260	270	10	Hard " Lime
270	280	10	Soft light shale
280	300	20	Hard light lime
300	410	110	Soft light shale
410	420	10	Hard light lime
420	460	40	Soft light shale
460	490	30	Hard Light lime
490	500	10	Soft light shale
500	510	10	Hard light lime
510	530	20	Soft light shale
530	535	5	Hard light lime
535	560	25	Soft light shale
560	575	15	Hard light lime
575	595	20	Soft light shale
595	605	10	Hard light lime
605	625	20	Soft ligh shale
625	635	10	Hard light lime
635	650	15	Soft light shale
650	670	20	Hard light lime
670	680	10	Soft light shale
680	690	10	Soft Red Rock
690	700	10	Soft light shale
700	720	20	Hard light lime
720	745	25	Soft light sand 2 bailers water)
745	760	15	Soft light shale
760	770	10	Hard light lime
770	780	10	Soft dark shale
780	820	40	Soft light sandy lime
820	840	20	" " shale
840	845	5	Hard light lime
845	885	40	Soft light shale
885	895	10	Soft light sand Hole full water)
895	905	10	Hard light lime
905	915	10	Soft dark shale
915	925	10	Hard dark lime
925	940	15	Hard dark sandy lime
940	950	10	Soft dark shale
950	960	10	Hard dark lime
960	970	10	Soft dark shale
970	1010	40	Hard light lime
1010	1020	10	Soft light shale
1020	1045	25	Hard light lime
1045	1050	5	Soft light shale
1050	1070	20	Hard light lime
1070	1075	5	Soft Red Rock
1075	1090	15	Hard Dark lime
1090	1110	20	Soft dark shale
1110	1130	20	Soft red rock
1130	1165	35	Soft light sand (hole (full wt
1165	1180	15	Soft light shale
1180	1205	25	Hard light sand y lime
1205	1210	5	Soft light shale
1210	1220	10	Hard light lime
1220	1225	5	Hard light sand
1225	1395	170	Soft light shale
1395	1450	55	Soft light sandy lime
1450	1470	20	Soft light sand Hole full
1470	1510	40	Soft dark shale water
1510	1550	40	Hard dark lime
1550	1590	40	Soft dark shale
1590	1600	10	Hard dark lime
1600	1620	20	Soft light sand(6 blrs
1620	1640	20	Soft dark shale water)
1640	1650	10	Soft dark shale
1650	1720	70	Soft light sand Hole full
1720	1760	40	Soft light shale water
1760	1765	5	Hard light lime
1765	1855	90	Soft dark shale
1855	1865	10	Hard light sand
1865	1870	5	Soft light shale
1870	1875	5	Hard light lime
1875	2030	155	Hard light sand
2030	2055	25	Soft dark shale
2055	2150	95	Hard dark sand
2150	2205	55	Soft dark shale
2205	2215	10	Hard dark lime
2215	2245	30	Soft dark shale
2245	2255	10	Hard dark lime
2255	2285	30	Soft dark shale
2285	2315	30	Hard light sand
2315	2340	25	Soft dark shale
2340	2345	5	Hard dark lime
2345	2575	230	Soft dark shale
2575	2590	15	Hard light lime
2590	2610	20	Soft dark shale
2610	2715	105	Hard dark lime
2715	2725	10	Soft black slate
2725	2760	35	Hard light lime
2760	2800	40	Soft black slate
2800	2845	45	Hard dark lime
2845	2855	10	Soft black slate (1 Baili
2855	2870	15	Hard dark lime water
2870	2960	90	Soft dark shale
2960	2970	10	Hard light lime
3002	3032	30	Soft brown oil Sand
3032	Bottom of hole		
297	2980	10	Soft light shale
2980	3002	22	Hard light sandy shale

09/17

Osage Form No. 139
Revised ~~12-22-48~~

RECEIVED
APR 1 - 1963
OSAGE AGENCY

1 - OIA
1 - File

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSAGE INDIAN AGENCY
PAWHUSKA, OKLAHOMA

Date 3-28-63

Application For Operation and Report On Wells

NORTH BURBANK UNIT 23

NW 14-27-5

(Location fee paid to whom) (Date) (Amount)

Well No. 8 is located 980 ft. from {~~N~~ / S} line and 300 ft. from {E / ~~W~~} line.

NW/4, Sec. 14 (¼ Sec. & Sec. No.) 27N (Twp.) 5E (Range) Osage County, Oklahoma.

The elevation of the {surface / derrick floor} above sea level is _____ ft.

USE THIS SIDE TO REQUEST AUTHORITY FOR WORK
(three copies required)

Notice of intention to:

- Drill ☐
- Change plans ☐
- Deepen or plug back ☐
- Convert ☐
- Shoot or acidize ☐
- Pull or alter casing ☐
- Abandon well ☐
- _____ ☐

Details of Work

State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work;

I understand that this plan of work must receive approval in writing of the Osage Indian Agency before operations may be commenced.

Lessee: _____

By: _____

Title: _____

Address: _____

Approved: _____
Osage Agency Inspector
4-4-63

09/17

USE THIS SIDE TO REPORT COMPLETED WORK
(one copy required)

Character of well (whether oil, gas or dry) Oil

Subsequent report of:

- Conversion ☐
- Shooting or acidizing ☐
- Altering casing ☐
- Plugging back ☐
- Abandonment ☒

Details of Work

Spotted 55 sx reg w/30% Diacel D & 2% CC @ 3025' - TOC 2960'. Ripped 7" csg 2715-2390' & plg 110 jts. Dmpd 10 sx cmt @ 2380'. Ripped 8-5/8" csg 1580-1490' & pld 71 jts. Mudded hol to surf.

(Continue on reverse side if necessary)

This block for plugging information only

CASING RECORD

Size	In hole when started	Amount recovered	If parted: Depth	If parted: How
8-5/8	2346'	1560'		
7	2806'	2425'		
ORIGINAL TOTAL DEPTH				

Plugging commenced 6-26-62

Plugging completed 8-10-62

Name of the inspector who supervised the plugging of this well _____

Lessee: Phillips Petroleum Company

By: R. O'Neill Dist. Supt.

Subscribed and sworn to before me this 28th day of March 19 63

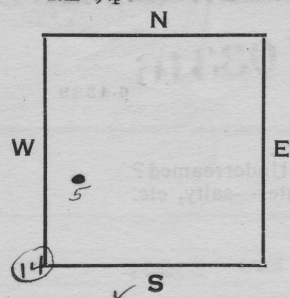
L. W. Howard.

Notary Public

My commission expires 7-12-66

12340

NE ¼ SEC. 14 T 27 R 5



SPECIFY OIL, ~~GAS, OR DRY~~

5—425a.

03315

DEPARTMENT OF THE INTERIOR
OFFICE OF INDIAN AFFAIRS
FINAL REPORT OF COMPLETED OR DEEPENED WELLS
FOR LANDS COVERED BY DEPARTMENTAL LEASES

MISCELLANEOUS
RECEIVED
SEP 22 1924
NO. 22666
OSAGE AGENCY

This report must be filed within Ten Days after well is shot or producing natural. Use this form for Supplemental Report on Wells plugged back.

COMPANY OPERATING Phillips Petroleum Co., ADDRESS Bartlesville, Oklahoma.

LESSEE Phillips Petroleum Company, LESSOR M. E. Alfred OSAGE TRIBE OF INDIANS

WELL No. 5 NE ¼ SEC. 14 T. 27 R. 5 , OSAGE COUNTY

Well located 975' ~~fr N~~-S. ~~of~~ line and 300' ~~fr E~~-W. ~~of~~ line Elevation 1124.8 Gr.
(Derrick floor, relative to sea level.)

Well drilled by Warren Drilling Co. Superintendent A. R. Edmondson,
Date commenced drilling 7-21-24 , 19 Finished 9-15-~~24~~ 24 , 19
Date commenced deepening , 19 Finished , 19

CASING USED IN DRILLING Length	Size	Wt. per ft.	Thread	CASING LEFT IN HOLE Length	Landed at	SHOE Length	Make	PACKERS Kind	Length	Set at
20'	8" Ins.	20 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
873	8 Ins.	15½ Lbs.	Per in.	41'11"	Ft.	Ft.		,	Ft.	Ft.
1280	6 Ins.	12½ Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
1624	3 Ins.	10 Lbs.	Per in.	Ft.	Ft.	Ft.		,	Ft.	Ft.
2338	10 Ins.	8¼ Lbs.	Per in.	2338 Ft.	10	Ft.		,	Ft.	Ft.
2795	5 6 5/8 Ins.	24 Lbs.	Per in.	2795 Ft.	5	Ft.		,	Ft.	Ft.

What was done to protect sands when outside casing was pulled?

Is water completely shut off? yes Amount water with oil per cent. Is oil cut

Oil—Initial 24-hr. production 100 bbls. Initial 24-hr. production after shot 250 bbls. Shot from 2997 to 3041 size 100 qts.

Tubing

Gas—Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.
Initial open flow sand from ft. to ft. Cu. ft. rock pressure lbs. per sq. in.

Dry Hole—State what steps have been taken to plug.

Location fee paid Date Amount $

$100.00 location bonus paid Gen N. Wise 7-3-24.

Red hole 2958' in sandy shale, top gas 2992, 1st oil 2998, first flow at 3018', well flows intermintently every two hours, at 3042. Sand soft 2998' to 3023, harder to 3042, total depth, cable 9-15-24.

2787	2823	lime, grey hard	
2823	2833	Slate, black soft	
2833	2843	Lime, white hard	
2843	2853	Slate, black soft	
2853	2870	Lime, gray hard	
2870	2963	Slate, blue soft	hole reduced 2958'
2963	2973	Lime, white hard	
2973	2992	Shale, grey soft	steel line measure
2992	3042	sand, grey soft	first gas at 2992 Total Depth. 3042

Sign here J. S. Dewar

Your position with lessee Asst Gen. Supt

1 - OIA
1 - File

Osage Form No. 139
Revised 12-22-48

UNITED STATES
DEPARTMENT OF THE INTERIOR
OSAGE INDIAN AGENCY
PAWHUSKA, OKLAHOMA

Date 4-30-63

Application For Operation and Report On Wells

NORTH BURBANK UNIT 24

(Location fee paid to whom) (Date) (Amount)

Well No. 5 is located 975 ft. from {N/S} line and 300 ft. from {E/W} line.

NE/4, Sec. 14 (¼ Sec. & Sec. No.) 27N (Twp.) 5E (Range) Osage County, Oklahoma.

The elevation of the {surface / derrick floor} above sea level is _____ ft.

NE 14-27-5

USE THIS SIDE TO REQUEST AUTHORITY FOR WORK (three copies required)

Notice of intention to:

- Drill ☐
- Change plans ☐
- Deepen or plug back ☐
- Convert ☐
- Shoot or acidize ☐
- Pull or alter casing ☐
- Abandon well ☐
- _____ ☐

Details of Work

State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work;

I understand that this plan of work must receive approval in writing of the Osage Indian Agency before operations may be commenced.

Lessee: _____

By: _____

Title: _____

Address: _____

Approved: _____
Osage Agency Inspector
5-3-63

09/17

USE THIS SIDE TO REPORT COMPLETED WORK (one copy required)

Character of well (whether oil, gas or dry) OK

Subsequent report of:

- Conversion ☐
- Shooting or acidizing ☐
- Altering casing ☐
- Plugging back ☐
- Abandonment ☒

Details of Work

Spotted 105 sx common w/30% Diacel D & 2% CC @ 2988' - TOC 2588'. Ripped 7" csg @ 2500' & pld 119 jts. Dmpd 10 sx cmt @ 2490'. 8-5/8" csg parted 125' down - pld 125'. Mudded hole to surf.

(Continue on reverse side if necessary)

This block for plugging information only

CASING RECORD

Size	In hole when started	Amount recovered	If parted	
			Depth	How
8-5/8"	2340'	125'	125'	Pld into
7"	2795'	2515'		
ORIGINAL TOTAL DEPTH				

Plugging commenced 7-19-62

Plugging completed 8-24-62

Name of the inspector who supervised the plugging of this well _____

Lessee: Phillips Petroleum Company

By: K. O'Neill Area Supt.

Subscribed and sworn to before me this 30th day of April 1963

W. K. Howard.
Notary Public

My commission expires 7-12-66

Carrie Munroe #10 (Kay County- SW/4 of 3-27N-5E)

- **Initial Findings:** Old plugged wellbore started surfacing fluid in February 2014 (NOTE: Chaparral Energy did not own or operate the lease at the time of spill and do not know the exact date surfacing began or the amount).

- **Status of P&A before Surfacing:** No OCC records found of how the well was P&A'd prior to surfacing.

- **Cause:** It is suspected that the old plugging operation was inadequate and failed allowing fluid to escape as the reservoir pressure increased.

- **Solution:** Ceased all injection to the SE/4 of section 3 (East of Carrie Munroe #10), plugged all wells to the West of Carrie Munroe (NE/4 section 10). Additionally, shut-in two injection wells south of Carrie Munroe in Section 10. The well was re-entered and cleaned out to 2910'. Three cement plugs were set to properly plug the wellbore with one plug over the Burbank formation, one plug over the Layton formation and one from 450' to surface. The ground was remediated as directed.